Sachse Amateur Radio Association

SARA SKYWAVES

W5SRA

December 2020

My corner of the "Corner of the Shack",

by Steve W5SOT

In some ways it's hard to believe that it's already the Christmas Season, in other ways its been a long, long… really long year. We at the Sachse Amateur Radio Association, hope that this issue of SARA Skywaves finds you and your family doing well. While spending more time with family may be the last thing you need at this point, maybe at least you can all slow down and focus on the things that matter.

I will apologize in advance for the thin Christmas issue. I will draw your attention to the pictures from the November in-person meeting. It was great to be able to see everyone and Mike did a great job presenting on Fox Hunting.

The SARA Fox is almost ready and we are planning to start placing it very soon. Fox hunting is one thing that we can do as a group during Covid lockdowns since it doesn't require us to gather as a group. Look for more on this in upcoming issues and on the Weekly Nets.

Another thing to make note of in this issue is the ARRL Current page. The content that ARRL puts together for members is outstanding and in my opinion more than worth the price of membership. There are now 4 print publications and a number of podcasts to take advantage of. The Eclectic Tech episode 20 podcast from November 19 on underwater Data Centers was amazing. I highly recommend taking advantage of these resources.

Jim Eatman's (KG5WAW) CW Corner has turned into a regular column and Jim continues to share his learning and journey into the realm of CW. As a newsletter editor I appreciate his time to provide meaningful content that reflects well on the entire organization. Well Done, Jim!

Please make note that the General Meeting this week will be online again due to spikes in reported Covid cases and guidance by our local leaders. The link is below on this page. Don your craziest Christmas sweater or a Santa hat, spike your eggnog and come hang out with us for the last meeting of 2020.

Finally I will leave you with this Ham version of the Night before Christmas. Hope you all have a Merry Christmas, and even more so a happy New Year!

-Steve W5SOT

Shack, Continued on page 2

Next General Meetin
Thursday, December 1

Online

Meeting Link

JOIN US ON THE AIR

NOTE: ALL SARA operations and all Sachse ARES/RACES operations are now being conducted on the new W5SRA repeater!

SARA Weekly Information Net
When: Weekly on Wednesdays, 8:00pm – 8:30pm
Where: W5SRA (440.350, +5, PL 110.9 in and out)

The Sachse Amateur Radio Association uses the W5SRA repeater in Sachse, TX:
- Frequency: 440.350 MHz
- Shift: +5 kHz
- PL tone: 110.9 (in and out)

Shack, Continued from page 1

'Twas the night before Christmas,
And all through two-meters,
Not a signal was keying up
Any repeaters.

The antennas reached up
From the tower, quite high,
To catch the weak signals
That bounced from the sky.

The children, Technicians,
Took their HT's to bed,
And dreamed of the day
They'd be Extras, instead.

Mom put on her headphones,
I plugged in the key,
And we tuned 40 meters
For that rare ZK3.

When the meter was pegged
By a signal with power.
It smoked a small diode,
And, I swear, shook the tower.

Mom yanked off her phones,
And with all she could muster
Logged a spot of the signal
On the DX PacketCluster,

While I ran to the window
And peered up at the sky,
To see what could generate
RF that high.

It was way in the distance,
But the moon made it gleam -
A flying sleigh,
With an eight element beam,

And a little old driver
Who looked slightly mean,
So I though for a moment
That it might be Wayne Green.

But no, it was Santa,
The Santa of Hams,
On a mission this Christmas
To clean up the bands.

He circled the tower,
Then stopped in his track,
And he slid down the coax
Right into the shack.

While Mom and I hid
Behind stacks of *CQ,*
This Santa of hamming
Knew just what to do.

He cleared off the shack desk
Of paper and parts,
And filled out all my late
QSLs, for a start.

He ran copper braid,
Took a steel rod and pounded
It into the earth
Till the station was grounded.

He tightened loose fittings,
Resoldered connections,
Cranked down modulation,
Installed lightning protection.

Shack, Continued on page 3

SARA Skywaves

Is published each month for the purpose of informing Sachse Amateur Radio Association members of current events and issues of interest to amateur radio. Articles and suggestions are always welcome. Articles that appear in this publication may be reproduced provided credit is given to *SARA Skywaves* and to the original source.

SARA is a Texas Non-Profit 501(c)3 corporation based in Sachse, TX.

Editor: Steve Harbin W5SSOT

P.O. Box 1764

Wylie, TX 75048-1764

UPCOMING EVENTS

Dec 10 - General Meeting

Meeting will be online again this month. Meeting Link

Dec 12 - VE Test Session

9:00 – 11:00am. Monthly on the second Saturday. 508 Parker Rd, Wylie, TX 75098. Contact: AC5BC (Bill) 214.500.3472, ac5bc2@verizon.net for additional details. While not required, scheduling with Bill in advance is appreciated!

Dec 22 – Board Meeting

The BOD meeting is being moved up to Tuesday this again month to accommodate Christmas Holidays.

Events for 2021

- Foxhunt on weekends? (Prizes?)
- Winter Field Day 1/30-31 2021
- Mentor Fest 4/24 2021
- Summer Field Day 6/26-27 2021
- Ham Radio in the Park (ideas needed)

Wednesday Repeater Net
W5SRA Repeater 440.350,
Tone 110.9 @8:00 PM
9 Dec - Linda, K5LCS
16 Dec - John, W5JWS
23 Dec - KC KI5GMT
30 Dec - Tricia, K5TIL

Sunday Public Service Net
W5SRA Repeater 440.350,
Tone 110.9 @8:00 PM

He neutralized tubes
In my linear amp...
(Never worked right before –
Now it works like a champ).

A new low-pass filter
Cleaned up the TV.
He corrected the settings
In my TNC.

He repaired the computer
That wouldn't compute,
And he backed up the hard drive
And got it to boot.

Then, he reached really deep
In the bag that he brought,
And he pulled out a big box.
"A new rig?" I thought!

"A new Kenwood? An Icom?
A Yaesu, for me?
An Elecraft, TEN-TEC
Or Flex, could it be!"
(If he thought I'd been bad
It might be QRP!)

Yes! The Ultimate station!
How could I deserve this?
Could it be all those weekends
I worked Public Service?

He hooked it all up
And in record time, quickly
Worked 100 countries,
All down on 160.

I should have been happy.
It was *my* call he sent.
But the cards and the postage
Will cost a month's rent!

He made final adjustments,
And left a card by the key:
"To Gary, from Santa Claus.
Seventy-Three."

Then he grabbed his HT,
Looked me straight in the eye,
Punched a code on the pad,
And was gone - no good bye.

I ran back to the station,
And the pile up was big.
But a card from St. Nick
Would be worth my new rig.

Oh, too late, for his final
Came over the air.

It was copied all over.
It was heard everywhere.

The Ham's Santa exclaimed
What an old ham expects:
"Merry Christmas to all,
And to all, good DX."

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What is AmazonSmile?

AmazonSmile is a simple and automatic way for you to support your favorite charitable organization every time you shop, at no cost to you. When you shop at smile.amazon.com, you'll find the exact same low prices, vast selection and convenient shopping experience as Amazon.com, with the added bonus that Amazon will donate a portion of the purchase price to your favorite charitable organization. You can choose from over one million organizations to support.

How do I shop at AmazonSmile?

To support SARA, simply go to smile.amazon.com from the web browser on your computer or mobile device and setup the organization that you want to support. You may also want to add a bookmark to smile.amazon.com to make it even easier to return and start your shopping at AmazonSmile.

ARRL MEMBERS, Update your Email Subscriptions to receive the ARRL Current Monthly Email!

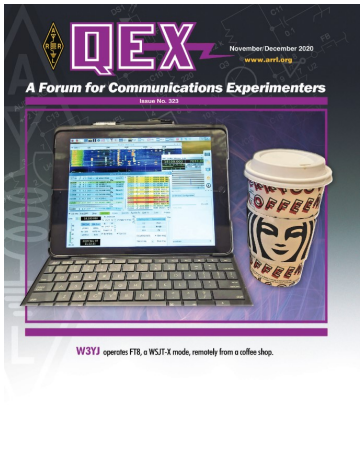
the ARRL CURRENT

Your monthly overview of ARRL publications and member benefits.

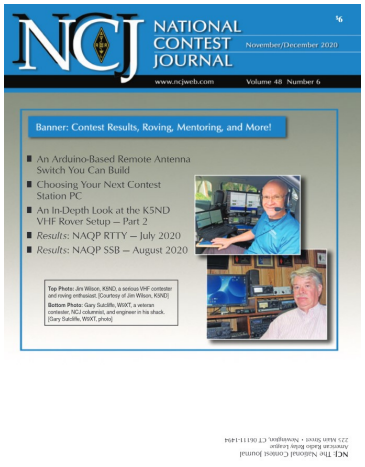
December QST

Nov/Dec OTA

Nov/Dec QEX


QEX
November/December 2020
A Forum for Communications Experimenters
W3YJ operates FT8, a WSJT-X mode, remotely from a coffee shop.

Nov/Dec NCJ


NCJ
NATIONAL CONTEST JOURNAL
November/December 2020
Banner: Contest Results, Roving, Mentoring, and More!
An Arduino-Based Remote Antenna Switch You Can Build
Choosing Your Next Contest Station PC
An In-Depth Look at the K5ND VHF Rover Setup — Part 2
Results: NAQP RTTY — July 2020
Results: NAQP SSB — August 2020

What's the Buzz

Eclectic Tech, Episodes 20 & 21

November 19, 2020 21 A novel undersea home for data servers; a chat with Nigel Vander Houwen, K7NVH, about HamWAN networks.

December 3, 2020 22 Generating electricity with gravity; a discussion with Bob Allison, WB1GCM, about vintage vs modern transceivers.

Listen Now - *Eclectic Tech*

On the Air, Episode 11– November 12

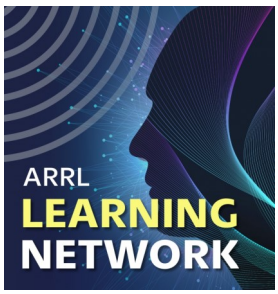
What makes a particular antenna the right one for your station? There are several things to consider beyond cost and complexity.

Listen Now - *On the Air*

ARRL Learning Network

Amateur radio has played a significant role in public service communications for the Boston Marathon for several decades. Learn more about the role Amateur Radio played in the aftermath of the Boston Marathon Bombing from Steve Schwarm, W3EVE

ARRL members can register for his upcoming webinar, "Amateur Radio's Role at the Boston Marathon Bombing " on Tuesday, December 8 at 12pm CST.



Losses

Amateur radio is all about losses. QRP operators know very little power can get you a long, long way. Losses are the reason that communications links fail. Here are some of the common ones:

1. Coax or ladder line loss. Increases with frequency and the length of the line.
2. SWR loss. Reflected power lost in coax/ladder line or dissipated in the transmitter.
3. Antenna tuner loss. Increases with frequency and the number of inductor turns used.
4. Balun/unun loss. Increases with frequency, and the number of wire turns used. Varies with core type.
5. Antenna azimuth loss. Loss due to signal not arriving at maximum azimuth lobe.
6. Antenna elevation loss. Loss due to signal not arriving at maximum elevation lobe.
7. Mispolarization loss. Loss due to signal not arriving in the exact antenna polarization plane.
8. Ground plane loss. Loss due to soil resistance when not using enough radials with a monopole.
9. Ground plane loss. Loss due to capacitive interaction with a dipole that isn't mounted high enough.
10. Ionospheric efficiency loss. Loss every time a signal is reflected at the ionosphere.
11. Ground/ocean bounce loss. Loss from signals hitting the Earth and reflecting upwards again.
12. Ground clutter loss.
13. At microwave frequencies, precipitation loss. Loss from reflections from rain.
14. 1/r loss. Due to distance.

I calculated that *without loss* items 1 – 13, a 5 watt, 20 meter signal from a ¼ wave monopole could go 56,000 miles and still produce a 1 uV signal at the radio on the other end. Obviously this doesn't happen; a 5 watt signal might go 1800 miles in my experience. The reason is system link losses.

How to reduce system link losses:

- Use low loss coax or ladder line. Keep the length as short as possible.
- Put the tuner at the antenna, not at the radio end of the coax.
- Use a high power tuner with a large wire diameter air core inductor, even for low power.
- Don't use directional antennas if you don't know the direction the signal is coming from.
- Good luck finding a dual polarization HF antenna. I found one, but it is enormous in size.
- If you use a monopole, throw out as many tuned radials as possible. If mounting a monopole in a vehicle, mount it in the center of the roof. Bumper or back corner mounts = -3 dB.
- Mount horizontal dipoles at least ½ wavelength above the Earth.
- For monopoles, take advantage of existing ground planes - such as steel-reinforced concrete foundations, driveways, and roads.
- To reduce ionospheric losses, use a lower elevation angle antenna to reduce the number of bounces necessary to make the distance. (Unfortunately, lower elevation angle antennas have higher ground clutter losses and they pick up more man-made noise.)
- Work the gray line to reduce ionospheric losses.
- Avoid siting the antenna where there is ground clutter. If there is a choice, aim for non-conductive clutter vs. steel or steel reinforced structures.

Learn and Have Fun with Morse Code

Howard Bernstein, WB2UZE and Jim Crites, W6JIM

Morse code or "CW" is a popular ham radio operating mode.

Learning CW does not have to be an arduous or lonely experience. Learn, practice, and enjoy CW with the methods used by the Long Island CW Club.

Thursday, December 17, 2020, 5 PM PST / 8 PM EST (0100 UTC on Friday, December 18)

Register Now >

- Use 45 degree polarization antennas when there is ground clutter. Ground clutter tends to be polarized either 0 or 90 degrees. At least some of your signal will get through.

- Talk to the station that's 2 miles away vs. the station that's 2000 miles away. (Just kidding, but it does work...)

System link losses totally dominate amateur radio operations. Hams usually take the brute force route and buy linear amplifiers to overcome the losses. That only works if the station on the other end also increases their power.

QRP operation is the crucible of amateur radio. Efficiency is the whole game, because increasing power isn't an option. QRP is a great place to learn a lot of things, and running 5 watts makes portable operations a lot simpler.

One of the most important lessons learned in QRP ops is - don't run 3 KHz bandwidth SSB. Run 200 Hz bandwidth CW. Carry a small code key to the summit – not a 50 lb. battery!

- Jim Eatman KG5WAW

SARA Club Officers for 2020-2021

Here are the newly elected officers for the Sachse Amateur Radio Association per the election held at the September General Meeting.

President.....Greg Kent, KK6AXF
Vice President.....John Smyder, W5JWS
Secretary.....Johnnie Young, KG5CQO
Treasurer.....David Mandala, KG5WFS
Public Information Officer.....John Briggs, KC6TVF
Director at Large.....Mark Mantooth, KI5CYA
Newsletter Editor.....Steve Harbin, W5SOT

JOIN THE ARRL

As an ARRL member you support the ranks of thousands of other ham radio enthusiasts shaping the Amateur Radio service today. If you consider yourself an active ham... you need ARRL now. If you are not presently an active ham... let ARRL help you.

As a member of the ARRL, for as little as $49.00 per year, here are some of the benefits you will enjoy:

- *QST* Magazine – your monthly membership journal
- QST online monthly digital edition
- QST Archive and Periodical Search
- Product Review Archive
- Email forwarding
- E-Newsletters – delivered to your inbox
- A voice in the affairs of ARRL and ham radio through locally appointed volunteers
- Publication Specials and on-line course discounts
- Emergency Communication Services
- Technical and Regulatory Information Services
- Operating Awards
- Ham Radio Equipment Insurance Plan Available
- Outgoing Foreign QSL Service

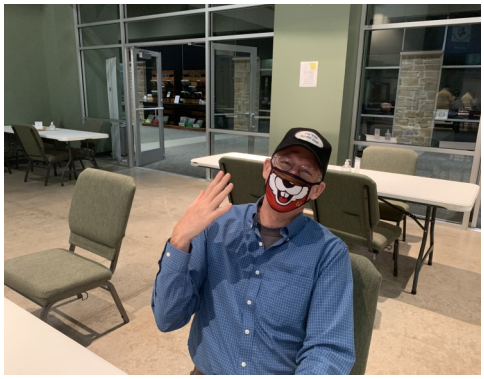
Plus much more!

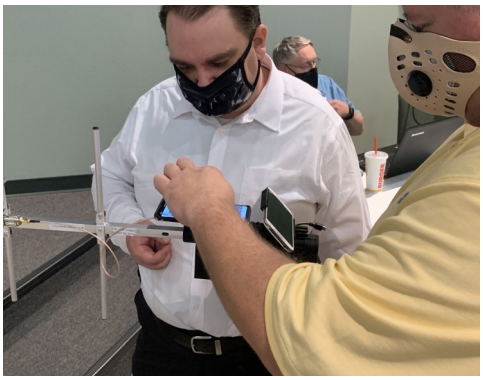
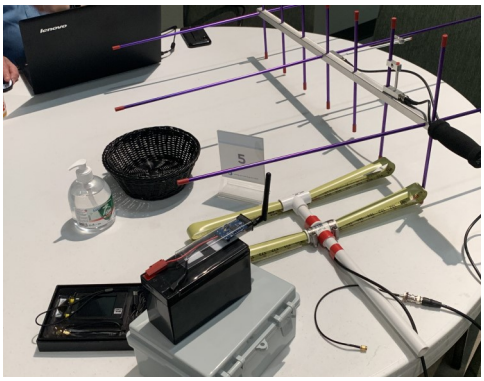
Take the next step in being an active participant in the future of ham radio. Join the ARRL today!

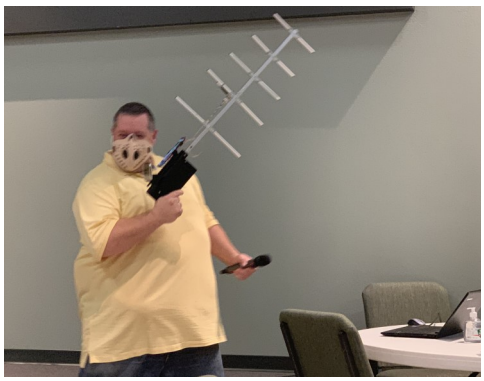
If you Prefer to Renew by Mail or Phone:

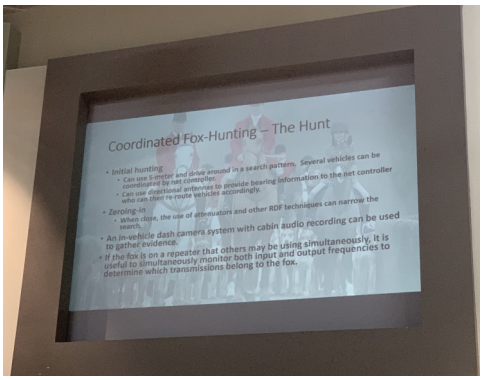
ARRL The national association for AMATEUR RADIO
225 Main Street, Newington, CT 06111-1400 USA
860-594-0200 or Toll-Free 1-888-277-5289

November 12 General Meeting






Coordinated Fox-Hunting – The Hunt
Initial hunting
Can use 5-meter and drive around in a search pattern. Several vehicles can be coordinated by net controller.
Can use directional antennas to provide bearing information to the net controller who can then re-route vehicles accordingly.
Zeroing-in
When close, the use of attenuators and other RDF techniques can narrow the search.
An in-vehicle dash camera system with cabin audio recording can be used to gather evidence.
If the fox is on a repeater that others may be using simultaneously, it is useful to simultaneously monitor both input and output frequencies to determine which transmissions belong to the fox.

Sachse Amateur Radio Association
Meeting Minutes
November 12, 2020

Start time: 7:30 pm

Location: North Pointe Church

Facilitator: Greg Kent (KK6AXF) President

Pledge was led by **Greg Kent (KK6AXF)**

Opening

Greg Kent (KK6AXF) President

Everyone introduced themselves and gave their call sign

Johnnie Young (KG5CQO)

Listed each attendee as they introduced themselves

Attendees

17 members

0 guest

Sachse Amateur Radio Association
Meeting Minutes
November 12, 2020

President's report – Greg Kent (KK6AXF)

Next board meeting is Oct 24th location TBA

Dec 10th Christmas Party at North Pointe Church at 7:30 with dish to pass

Next general meeting is Jan 14th, 7:30 pm, location TBD

Awards

Vice-President – John Smyder (W5JWS)

Activities Committee;

Need ideas for social distancing

Christmas Party – Dec 10th – North Pointe Church

Winter Field Day	Jan 30/31
Mentor Fest	Apr 24
Ham Com	June 17 – 19
Summer Field Day	June 26/27
Weekly Fox Hunt Sachse	being evaluated
Fox available for viewing	
Ham Radio in the Park	being evaluated

Other Ideas??

Dish to pass for Christmas Party – Dec 10th

Board would like to purchase the meat for the Christmas Party

John Smyder – W5JWS received a price form Community BBQ for enough meat for the club and needs a motion for the Board to purchase this meat not to exceed $300.00

Motion as stated; **Greg Kent – (KK6AXF)**

2nd to accept motion; **John Briggs – (KC6TVF)**

All agreed

Motion passed

Secretary – Johnnie Young (KG5CQO)

Minutes for the October meeting are posted on the web site, and were published in the newsletter

The club minutes are always available for your review.

Motion to accept – **John Smyder – (W5JWS)**

2nd to accept motion – **Lonnie Webb – (WG5WHQ)**

All agreed

Motion passed

Sachse Amateur Radio Association
Meeting Minutes
November 12, 2020

The club would like to welcome our newest Member—

Dave Gross – W6JDG, happy to have you join our group

Treasurer – David Mandala (KG5WFS)

Financial sheet for November updated to November 11th

Review of finances were presented

Current membership 20-21 year as of 11-11-20

30 licensed members, 2 Honorary Members

Current licensed members – ARRL 19 (63%)

Motion to accept – **Steve Harbin (W5SOT)**

2nd to accept motion – **Mark Mantooth (KI5CYA)**

All agreed

Motion passed

Public Information Officer – John Briggs (KC6TVF)

Saturday – QSO breakfast @ Woodbridge Cafe @ 8:00

In person on hold

Café is open but no large groups

Next VE Session – November 14th, Wylie Masonic Lodge

Need volunteers for NCS repeater

November 18th **Steve Harbin – W5SOT**

November 25th **John Smyder – W5JWS**

December 2nd **Lonnie Webb – KG5WHQ**

December 9th **Linda Smyder – K5LCS**

December 16th **John Smyder – W5JWS**

December 23rd **Kacie Webb – KI5GMT**

December 30th Tricia Linsey – K5TIL

Newsletter editor – Steve Harbin (W5SOT)

News letter was sent via e-mail and is on the SARA web site

Distribution #116

Submissions due by the 1st day of the month

Goal—to have the newsletter out a week prior to the general meeting

Always can use news articles and ideas

Projects you are working on or have completed

Events and activities related to Ham Radio

Articles you have read in other publications

Take pictures at all events & send to the Newsletter editor **Steve Harbin (W5SOT)** at newslettereditor@sachseradio.org

The newsletters are really good when members send in articles

Remember the newsletter goes beyond the membership

Director-at-Large – Mark Mantooth (KI5CYA)

Thanks **John Smyder – W5JWS** and **Greg Kent – KK6AXF** for adding Allstar to the Club repeater

Larry Hoffman – W5UWF asked for instructions for setting up Home radio systems to use Allstar

John Smyder – W5JWS indicated there are instructions on The Club's web site

A discussion followed about the present location of the repeater and the placement of the repeater at North Pointe Church in the near future. There is a possibility to wait about a year when a new building at North Pointe Church would provide a better location

David Mandala – KG5WFS made a motion to start the Wednesday, weekly SARA information net on the new repeater

2nd to accept the motion; **Larry Hoffman – W5JWF**

All agreed

Motion passed

Education Report – John Smyder (W5JWS)

Please help with subject matter

Upcoming General Meeting Subject Plans

Dec – Christmas Party

Jan – TBD

Break: 7:50 PM

Reconvened: 8:00 PM

Sachse Amateur Radio Association
Meeting Minutes
November 12, 2020

Guest Speaker

Mike McCafferty – N5MMC

Co-ordinated Fox Hunt

Fox Hunting is a good skill to help when one is searching for a particular radio. It helps one learn about problem areas. It could help one find a loss person or even a rough radio operator. A directional antenna works well helping the user to bet his bearings. An attenuator helps narrow down the direction of the signal. One can also use their body to block the signal. Users have even just removed their antenna from the radio to get a direction, especially when one gets close. Remember it may take multiple steps to narrow the search area.

Mike McCafferty – N5MMC used his homemade fox hunter to demonstrate how one can use these tools to help narrow down the search area. **John Smyder – W5JWS** turned on his newly built fox to use in this demonstration. **Mike McCafferty – N5MMC** homemade fox hunter used two phones and a homemade antenna.

When searching for a rough radio operator, having a coordinated Fox hunt with about 4 people helps to narrow down the field quickly. Everyone enjoyed the presentation and wanted to see it in action. Thanks to **Mike McCafferty – N5MMC** for his presentation and thanks to

John Smyder – W5JWS for making a fox that the club can now use to practice fox hunting.

Motion to adjourn:

David Mandala – KG5WFS

2nd to accept the motion; **Linda Smyder – K5LCS**

Adjourned: 8:30 PM

Sachse Amateur Radio Association Weekly Repeater Net Script

Version: 6.3 - November 12, 2020

Good evening and welcome to the "*Ham Radio in Sachse*" Weekly Information Net. My name is (*name, call sign*), and I will be your net control this evening. (***pause)*** This net is heard every Wednesday evening at 8:00pm on the W5SRA repeater, on frequency 440.350, +5, using a PL tone of 110.9. All licensed amateurs are invited and encouraged to participate, whether you are a club member or guest. (***pause)***. This is a Directed Net. Please do not transmit unless directed to do so by Net Control. If the net should go down, everyone should switch to simplex frequency 146.400, with no PL tone or offset. Also, if at any time, you have an emergency to report, break in by saying "Priority" or "Emergency" followed by your call sign and the net will stand by. An emergency is defined as the imminent threat to life or property. **Is there any emergency, priority or time sensitive traffic at this time?** ***Pause***

Check-Ins:
We will begin by taking check-ins, three at a time. If you would like to check into this net, please give your call sign phonetically, your name and repeat your Call Sign alphanumerically slowly, so Net Control can write it down. I will take three check-ins now.
(write down and read back call signs of check ins). (Remember: AllStarLink users (if any) need a few extra seconds to respond). (You might ask if there are any AllStar users who would like to check-in.)

Club Announcements: ***Now is a good time for Net Control to ID.***
Our first topic will be announcements from club officers. Any club officer on the net with an announcement, please give your call sign now.

Member & General Comments: ***Now is a good time for Net Control to ID.***
Our next topic is member & general comments. Any member of the Sachse Amateur Radio Association, or anyone else on this net, who would like to make a comment, please give your call sign now.

Tech Talk: ***Now is a good time for Net Control to ID.***
Now it is time for Tech Talk. You might ask any questions you have of a technical nature regarding amateur radio or computers. You might share any information or comments that you think would be valuable for the group. If anyone has an item for Tech Talk, please give your call sign now.

Swap Shop: ***Now is a good time for Net Control to ID.***
The next topic is Swap Shop. Anyone wishing to buy, sell, trade, or give away items related to ham radio or computers is invited to do so. Please do not haggle over price on the air. If anyone has an item for Swap Shop, please give your call sign now.

Education: ***Now is a good time for Net Control to ID.***
Now we would like to know if anyone has an idea for an Education Presentation. Anyone who wants to suggest an item for a future presentation, or who has a presentation to share this evening, please give your call sign now.

How Was Your HAM Week: ***Now is a good time for Net Control to ID.***
Now for the fun part of our hobby, "***How Was Your HAM Week***". This exercise allows any station to share anything related to HAM Radio. Example topics can be "DX'ing Observations", "Experiences", "Challenges", "Lesson-Learn with your equipment", "Victories on a project" or even something you have learned from a "not so successful project". Whether you are a member or guest, this exercise is voluntary. No station is under obligation to share anything. As your Net Control, I will start by briefly sharing my "Ham Week". (Share something you recently did.) If any station would like to share their "Ham Week", simply give your Call Sign and Net Control will recognize your station and give you the platform to share. (*Net Control – provide positive feedback on their topic.)*

Late Check-Ins: ***Now is a good time for Net Control to ID.***
Before we end this Net, I would like to take late check-ins. If there are any late check-ins, whether RF or AllStar, please give your call sign and name slowly and clearly. (*write down and read back each call sign*).

Last Call:
This is now the last call for any station that might have any comments? Please give your call sign.

Wrap-Up: ***Now is a good time for Net Control to ID.***
This concludes the "Ham Radio in Sachse" Weekly Information Net. If you would like more information about the Sachse Amateur Radio Association, please visit our web site at www.sachseradio.org. This is (*call sign*) and we now return the W5SRA repeater to its normal use.

Sachse Amateur Radio Association
Sachse, Texas 75048-3696
www.sachseradio.org
kf5nbo@gmail.com

Date: _____

Type of Application: **New Member** ☐ **or Renewal** ☐

Your Call Sign:_____ **Your License Class:**_____

Your Name:_____ **Spouses Name:**_____

Address:_____

City:_____ **State:**_____ **Zip:**_____

Home Phone:_____ **Work Phone:**_____

Cell Phone:_____ **Email:**_____

Membership Types: Please check only one option below:

☐ **Regular:** A regular member shall be any FCC licensed amateur radio operator who does not fall under the special provision of an associate or student membership. Regular member dues are $25.00 per year unless prorated (see below).

☐ **Family:** A family membership shall be any FCC licensed amateur radio operators and non-licensed family members interested in amateur radio who live in the immediate household. Family member dues are $30.00 per year unless

☐ **Associate:** An associate member shall be any person maintaining membership to support the association but who does not hold a license as a radio amateur. Associate member dues are $10.00 per year and are not prorated.

☐ **Student:** A student member shall be any FCC licensed amateur radio operator who is currently enrolled as a full-time student, is 18 years of age or younger, and is not otherwise eligible to be included in a family membership. Student member dues are $10.00 per year and are not prorated.

If selecting Family membership, please list the family members covered by this application.

Name:_____ **Email:**_____ **Call Sign (if any):**_____ **Lic Class:**_____

Name:_____ **Email:**_____ **Call Sign (if any):**_____ **Lic Class:**_____

Membership Dues: (Please check only one)

Dues are initially paid upon joining the association. Renewal dues are paid no later than the September meeting each year. A new application must be submitted each year as well. Dues are reduced (prorated) for Regular and Family members (only) who join or renew their membership after Dec 31st:

☐ Joining Sep 1 thru Dec 31, pay $25.00 for Regular dues, or $30.00 for Family dues.
☐ Joining Jan 1 thru Mar 31, pay $18.75 for Regular dues, or $22.50 for Family dues.
☐ Joining Apr 1 thru Jun 30, pay $12.50 for Regular dues, or $15.00 for Family dues.
☐ Joining Jul 1 thru Aug 31, pay $6.25 for Regular dues, or $7.50 for Family dues.

TOTAL DUE: $_____

Are you a current member of the ARRL? YES ☐ or NO ☐ (please choose only one).

By submitting this application, either by hand or any electronic means, you hereby agree to abide by the rules and regulations of the Sachse Amateur Radio Association.

Signature: _____